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IN THE UNITED STATES PATENT OFFICE

Applicants	: DR. HEINRICH LIEVER DR. HANS-JURGEN KLISCHAT and HOLGER WIRSING	Group	: 1755
Serial No.	: 10/083,989	Attorney Docket No.	: M 5329 US
Filed	: February 26, 2002		
For	: REFRACTORY SHAPED BODY WITH INCREASED ALKALI RESISTANCE		
Examiner	: KARL E. GROUP		

Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

Honorable Sir:

DECLARATION

I, the undersigned, Dr. HANS-JURGEN KLISCHAT, am one of the inventors/applicants of the above U. S. Patent Application, and therefore, I am familiar with the present invention and the prior art thereof.

Furthermore, I, the undersigned, Dr. HANS-JURGEN KLISCHAT, believe I am a "person of knowledge", inasmuch as I am the Head of Research and Development at Refratechnik Cement GmbH, Germany, have a Doctor's Degree in Engineering in Germany, and I am an academically trained Mineralogist.

In that the U. S. Patent and Trademark Office Examiner, KARL E. GROUP, stated that the "experimental data set forth in the arguments is not persuasive in overcoming the rejection because it is not in declaration or affidavit form", this declaration setting forth the experimental data is set forth below.

All statements made of my own knowledge are true and all statements made upon information and belief are believed to be true, and further, these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent resulting therefrom.

Dr. Hans-Jürgen Klischat, Am Westerberg 6, 37130 Gleichen, Germany
Head of R&D, Refratechnik Cement GmbH, 37079 Göttingen

Experiment concerning the production of refractory shaped bodies

High-alumina shaped bodies containing approx. 60 % by weight of Al_2O_3 were prepared to form refractory shaped bodies to investigate their burning behaviour.

#2 refractory body according the US-patent No. 5,338,711 consists of bauxite and fireclay which are adjusted to get an Al_2O_3-content in the fired body of 60 % by weight by using a weight ratio of 1.1875. This body consists furthermore of SiC-powder of 5 % by weight, a boron phosphate addition of 4 % by weight, and a phosphorous containing binder in an amount of 9.2 % by weight.

#1 refractory body containing bauxite and fireclay which are adjusted to get an Al_2O_3-content in the fired body of 60 % by weight by using a weight ratio of 1.1875. This body consists furthermore of SiC-powder of 5 % by weight, and a phosphorous containing binder in an amount of 9.2 % by weight.

These mixtures were pressed under a pressure of 80 MPa. Then, the shaped bodies were dried at a temperature of 150 °C, and after drying the shaped bodies were fired at a sintering temperature of 1250 °C.

The pictures of ENCLOSURE I show the results after sintering, as follows:

PHOTO A: comparison of refractory shaped body #2 (on the left) and refractory shaped body #1 (on the right) after firing at 1250 °C;

PHOTO B: detailed view of refractory shaped body #2 after firing at 1250 °C; this material containing 60 % Al_2O_3 forms severe glassy bubbles on the surface preventing any further investigations

PHOTO C: detailed view of refractory shaped body #1 after firing at 1250 °C; this material containing 60 % Al_2O_3 shows the typical appearance of a shaped refractory product after firing.

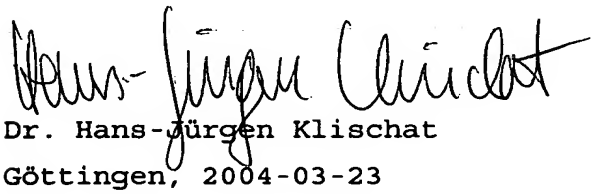
It is clearly shown that only the composition of the present invention (PHOTO C) can be used as a refractory material due to its acceptable appearance, to the contrary the composition according to the US-patent 5,338,711 (PHOTO B) has lost its shape by forming a bubble-like structure, thus preventing the use as a refractory material.

This becomes very clear in PHOTO D, PHOTO E, and PHOTO F, where the bubbles are shown in a detailed view.

At the moment the cause of the behaviour of the material according to the US-patent 5,338,711 is not clear, but it is rather obvious that at least an amorphous boron phosphate silicate glass forms with the investigated composition, which becomes liquid and forms bubbles under the influence of temperature.

This can be effectively prevented by the composition of the present invention, where a stable composition after firing is achieved, which can be used for refractory purposes according to the present invention.

I declare that all statements made herein of my own knowledge are true; and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application for patent or document or patents resulting therefrom.



Dr. Hans-Jürgen Klischat

Göttingen, 2004-03-23

ENCLOSURE I

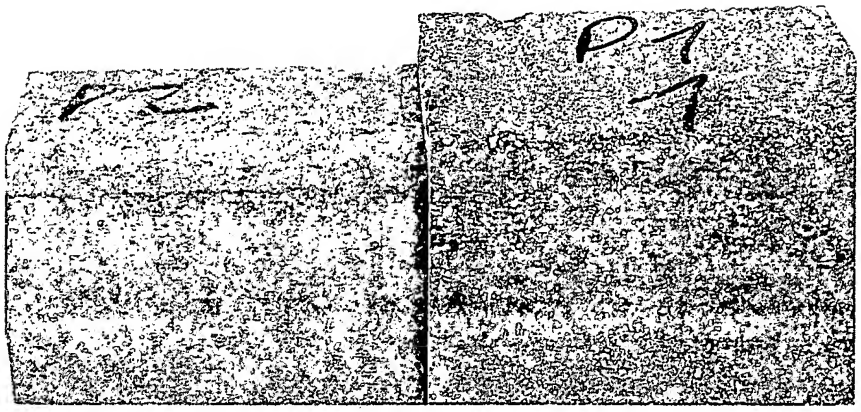


PHOTO A

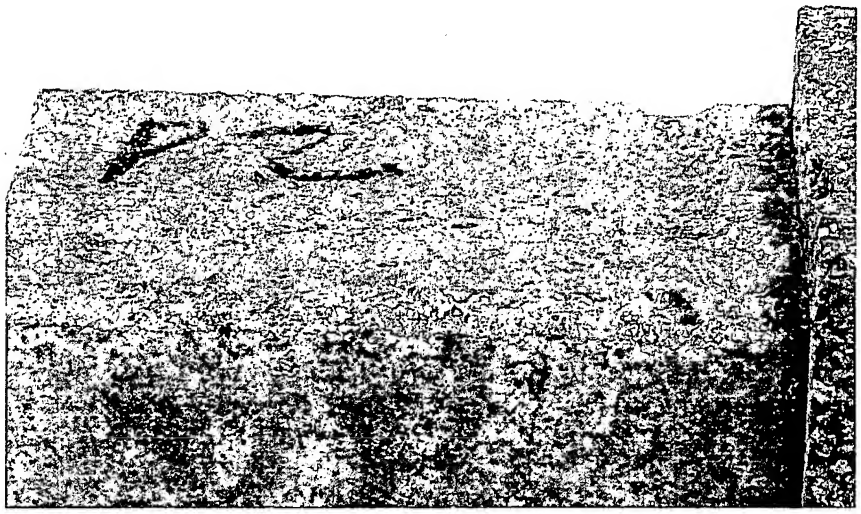


PHOTO B

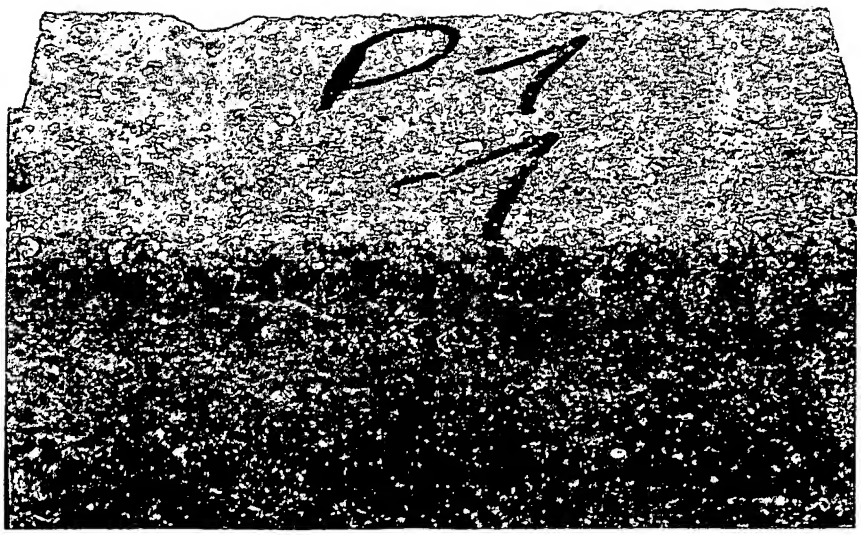


PHOTO C

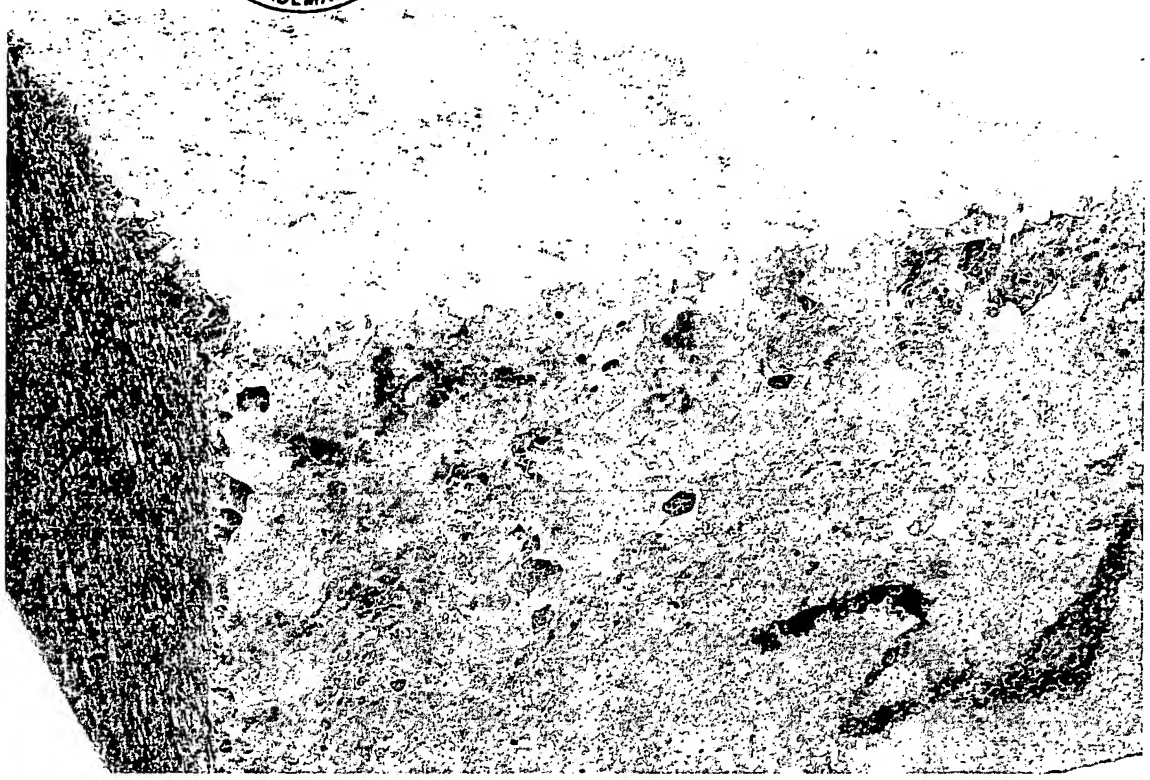
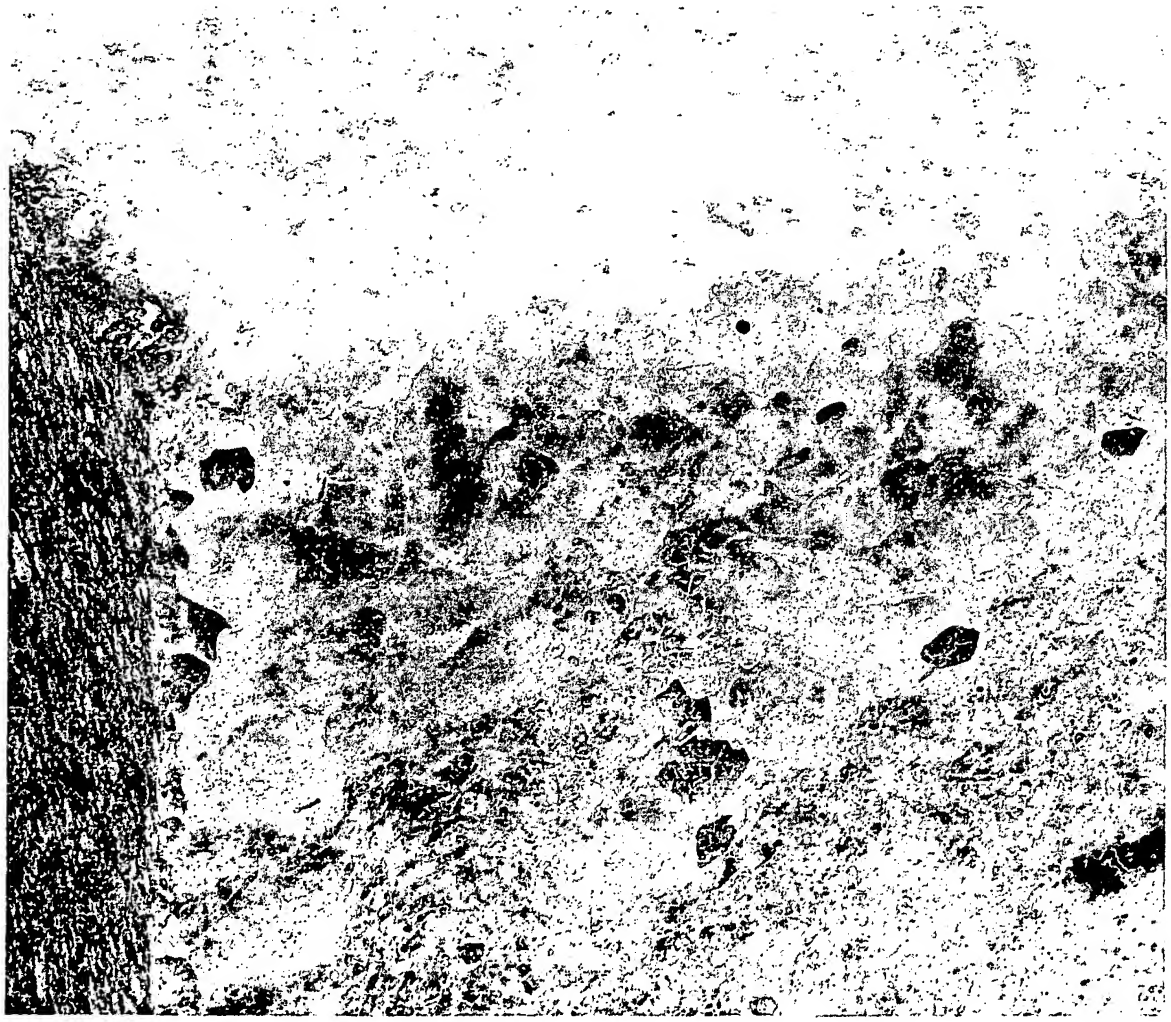


PHOTO D
PHOTO



PHOTE

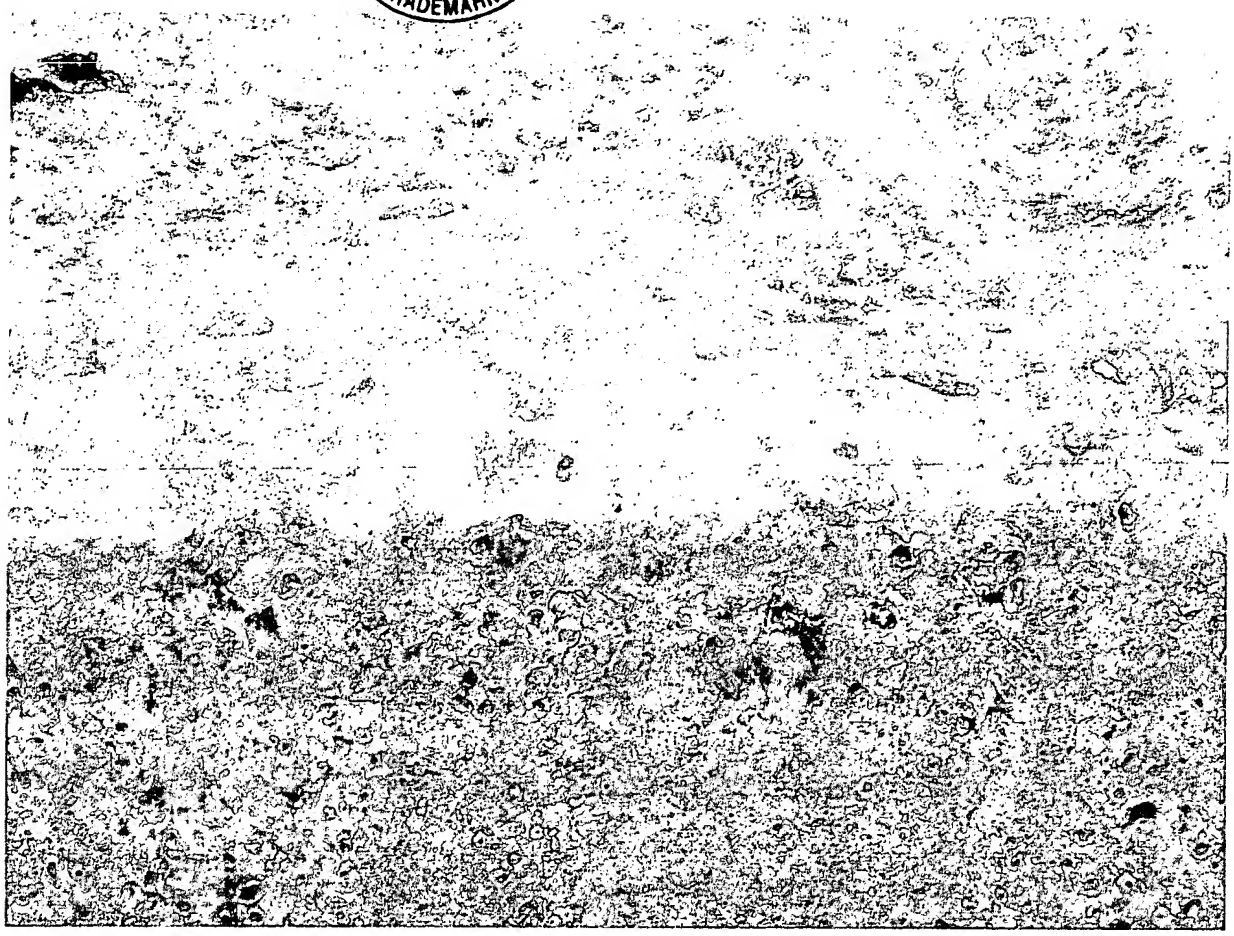


PHOTO F